REMARKS

Claims 1-10 are pending.

Claims 1-10 stand rejected.

Claims 1-6 are amended.

No new matter has been added.

Claims 1-10 are hereby submitted for reconsideration.

In the Office Action, the Examiner has continued the previous rejection of claims 1-10 under 35 U.S.C. § 102(e) as being anticipated by Liu (U.S. Patent No. 6,519,060). Applicants respectfully disagree with the Examiner and submit the following remarks in response.

The present invention as claimed in independent claim 1 is directed to an optical multiplex transmission method for transmitting optical signals from a first optical transmission line to a second transmission line where the optical signal group is sent across a plurality of nodes in network. ***The second transmission line connects a first node to a next second node.***

For each of said nodes in said network a multiplexed optical signal group is accepted from a first optical transmission line, where the optical sign group has a plurality of optical wavelength signals. The resulting multiplexed optical wavelength signals are output to a second transmission line;

During processing of outputting the multiplexed optical wavelength signal to the

second transmission line, ***wavelengths are specified which are not used only in the second optical line by checking state of usage of wavelengths in] said next second node.***

At least one of the optical wavelength signals included in the optical signal group is converted into a wavelength-converted optical wavelength signal whose ***wavelength is one among the wavelengths not used in the second optical transmission line.***

At least one the wavelength-converted optical wavelength signals is multiplexed with at least one other of the optical wavelength signals included in the optical signal group where the wavelength-converted optical wavelength signal is not multiplexed with the optical wavelength signal from which said wavelength-converted optical wavelength signal was originally converted.

Independent claims 2-6 also contain at least this same limitation.

Such a process is shown in Figure 4, as well as steps 102 and 103 of Figure 12. With regard to Figure 4 a first transmission line can be seen as the input from Node B to Node C and the second transmission line can be seen as the output line from Node C to Node D.

Using communication "h" as an example, this signal is initially picked up and transmitted to Node C on the third channel (counting from top down) and has a destination of Node E. However, this third channel is already in use in the communication path at Node D by a prior transmission "d"

Thus, according to the present invention, when Node C is packaging the resulting multiplexed optical wavelength signals to be output to the second transmission line (output to Node D), wavelengths are specified which are not used only in the second

optical line to Node D by checking state of usage of wavelengths in the next node D. As such, at least one of the optical wavelength signals included in the optical signal group is converted into a wavelength-converted optical wavelength signal whose wavelength is one among the wavelengths not used in the second optical transmission line.

An advantage of this method over the prior art is that it increases throughput in the optical network. For example, with the prior art techniques, it is required to select a wavelength which is not used in any of the zones. Accordingly, when a request for a connection has occurred in a certain channel, a wavelength which is not used in any of the zones included from a certain apparatus to another apparatus must be selected. In the event there is no such wavelength (ie. one not used in any zone), the optical transmission channel requested to be connected cannot be connected in spite of the existence of unused wavelengths in the individual zones. (See page 5, lines 18-25)

Liu teaches such a prior art system where when wavelength conversion on a channel is done to another wavelength, the wavelength selected is one not in use anywhere else in any of the zone, not just not in use in the next node. (See Figure 8 and the corresponding description) The main focus of Liu is to increase transmission speed by dedicating half of the network throughput to express lanes. These express lanes are used to allow signals that are simply passing through a particular pass through node to a next destination node to skip the add-drop sequence in the pass through node, thereby speeding their transmission.

As such, the cited Liu reference does not teach or suggest all of the elements as claimed in the independent claims. For example, there is no teaching or suggestion in

Liu for specifying wavelengths which are not used only in the second optical line by checking state of usage of wavelengths in the next second node.

Furthermore, there is no teaching or suggestion in Liu that discloses converting at least one of the optical wavelength signals included in the optical signal group into a wavelength-converted optical wavelength signal whose wavelength is one among the wavelengths not used only in the second optical transmission line.

For at least these reasons, Applicants submit the cited prior art does not teach or suggest all of the elements as claimed in the present invention in independent claims 1-6 and respectfully request that the rejection of these claims be withdrawn. Likewise, as claims 7-10 are dependent from claims 3 and 7 for at least the same reasons, the rejection of these claims should also be withdrawn.

Applicants respectfully submit that the present invention as claimed in claims 1-10 is now in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that a telephone interview would advance the prosecution of this application he is invited to contact the undersigned at the number listed below.

Respectfully submitted

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By: _____

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